Newsletter of the National Biological Information Infrastructure

nbii Access

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Wildlife Disease Information Node: Leading Efforts to Develop the National Chronic Wasting Disease Data Clearinghouse

▲ *CWD throughout North America as of September 2004. Map courtesy of USGS National Wildlife Health Center, <http://www.nwhc.usgs.gov/research/chronic_wasting/chronic_wasting_map.html>.*

▲ *Infected mule deer with CWD.*

Photo credit: Christina Sigurdson, Colorado State University. Photo taken at Colorado Division of Wildlife Research Facility.

The NBII Wildlife Disease Information Node (WDIN), in collaboration with the USGS National Wildlife Health Center, is developing a central repository for Chronic Wasting Disease (CWD) data. CWD is a fatal disease of the nervous system affecting elk, white-tailed deer, and mule deer in a limited number of areas in North America. Due to the potential human health and economic impacts associated with CWD, diligent surveillance and accurate information are critical to managing CWD effectively. Currently, no national system exists for common access to scientific, technical, and geospatial information on CWD, and there are many aspects of the disease for which information is very limited.

WDIN's national CWD Data Clearinghouse (CWDDC) is designed to address this need, allowing easy access to CWD surveillance, research, and testing data. As additional experience is gained and surveillance, research, and testing results are obtained, all partners will benefit from the presence of an active clearinghouse for CWD information from which nationwide

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In This Issue

New and Improved NBII Portal Introduced

Many of you may have noticed the new "look" of the NBII Portal <My.NBII.Gov>, but have you taken a peek inside? The NBII Information Technology (IT) Team has recently completed the roll-out of the upgraded and improved NBII Portal, which now includes many sought-after software improvements, including "live" editing of documents, immediate notification of fresh content, and enhanced searching capabilities.

Another new feature is virtual storage space for what are called "Personal Projects." These personal projects allow users to track individual documents, tasks, and calendar events from any Internet-capable computer, regardless of location. As the name implies, they are for personal use, and are not associated with other communities or groups. As the popularity of this feature catches on, the IT team believes frequent NBII

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NBII Aids MaNIS in Assessing Mammalian Species Diversity

The National Science Foundation (NSF) provides funding for several informatics databases designed to enhance the accessibility of species information throughout North American universities and institutions. The network of collection databases emanating from such NSF programs is highly compatible with the complementary efforts of both the NBII <www.nbii.gov> and the Global Biodiversity Information Facility (GBIF) <www.gbif.org>.

One of the more promising and robust networking databases supported by NSF is the Mammal Networked Information System (MaNIS), which represents an international network collaboration among mammal specimen collections. The emergence of MaNIS as an information network addresses the need for natural history museums to collaboratively construct and sustain a biodiversity informatics infrastructure for mammalian species. The objectives of this information network are to: (1) facilitate open access to combined specimen data from a Web browser, (2) enhance the value of specimen collections, (3) conserve curatorial resources, and (4) use a design paradigm that can be easily adopted by other disciplines with similar needs.

MaNIS is designed to achieve these objectives while avoiding both the long-term, external maintenance of a network and the centralized management of data. This goal is consistent with key NBII and GBIF initiatives designed to make large amounts of taxonomic and ecological data about organisms available to any individual with access to the Internet.

Development of a networked information system such as MaNIS allows universities and institutions to develop and distribute this information and represents the first time that a full database of mammal collections is made available online. The database of mammalian species collections was culled from among 17 institutions including the Natural History Museum at the University of Kansas, the Museum of Southwestern Biology at the University of New Mexico, the Museum of Zoology at the University of Michigan, and the Museum of Vertebrate Zoology at the University of California at Davis. Those museums contain 629,502 (47%) of the 1,349,080 total mammalian species holdings housed across the 17 institutions.[1] Researchers believe that the scientific knowledge emanating from these data will reveal previously unknown evolutionary patterns about mammalian species diversity.

The NBII has committed to assisting institutions in connecting to MaNIS and its sister networks. Information about the MaNIS network system can be linked through NBII Web resources via BioBot (cataloging Node: IABIN). The Web site is maintained by the University of California, Berkley <http://elib.cs.berkeley.edu/manis/>.

For additional information, please contact the NBII's Tyrone Wilson at <tyrone_wilson@usgs.gov>.

The NBII is a Web-based system that provides access to biological data and information on the nation's biological resources. Through the NBII, information from government agencies, universities, natural history museums, and many others is made available to NBII users, who include resource managers at public agencies, scientists in the public and private sectors, educators at all levels, and the general public. Currently, GBIF is an interoperable network of biodiversity databases and information technology tools that enable users to navigate and access vast quantities of information from museums and observation data from around the world. The NBII Program is the U.S. node for GBIF.

[1] MaNIS Project Description. Submitted to NSF January 8, 2001. <http://elib.cs.berkeley.edu/manis/ProjectDescription.html>

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Visit the NBII Home Page at <http://www.nbii.gov>.

CWD Data Clearinghouse (continued from page 1)

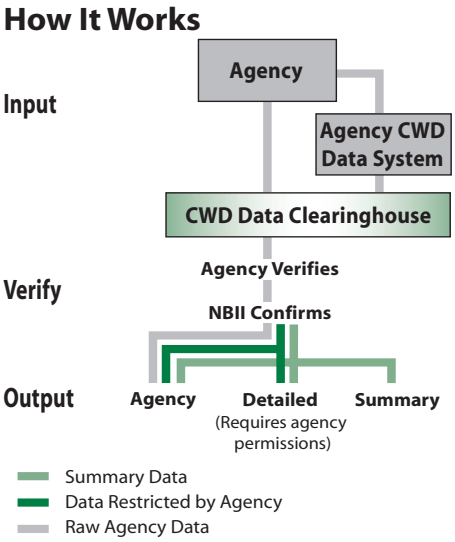
trends can be analyzed and informed management decisions can be made.

The Interagency CWD Task Force recognized that access to scientific, technical, and geospatial information would be critical to state and federal agencies, tribal groups, and others involved in CWD monitoring, surveillance, and on-the-ground research. This group further decided that development of a single system for consolidating the data clearinghouse would be the most efficient way to access CWD information at the national level, and endorsed WDIN as the common repository for this type of information. The task force identified several objectives for what would become the Clearinghouse, among them developing a set of data standards so that partners could share data on a nationwide basis.

Virginia Tech's Conservation Management Institute held a CWD data standards workshop attended by nearly 50 representatives from 24 states, 4 federal agencies, 1 tribal group, 2 non-government organizations, and 3 Canadian provinces who discussed and established a set of core data standards. The results of this workshop have been incorporated into the CWDDC.

The CWDDC marks the first time information and geographic information system (GIS) technology, combined with a standardized data collection format, are being used to study a wildlife disease on a national scale. This Internet-based, collaborative tool provides natural resource, agricultural, and other professionals with access to a powerful, interactive, and secure environment to store and query CWD surveillance, research, and testing data. This central data repository will offer many advantages, including resource sharing and spatial analysis tools. From their own locations, partners can use this data entry and data visualization application without the expense of creating individual stand-alone systems. Data can be entered directly into the Clearinghouse, or can be batch entered from an agency's own data system.

The Clearinghouse will continue to evolve as partner needs are identified and integrated into the system. Additional GIS and analysis tools will be added to help users and managers make informed resource decisions. Security is a major system component. Partners will maintain full control and ownership of their data and can choose which CWDDC collaborators can view selected data. To secure and protect partner data, a combination of user profiles, passwords, and database audit logs has been established. Before data are released, the contributing agency will verify data accuracy and the Clearinghouse coordinator will confirm that agency data-sharing requirements have been met.



Jillian Campbell, NBII Senior Consultant and technical lead for the development of the CWDDC, demonstrates system features at the IAFWA Annual Meeting workshop.

Three states — Wisconsin, Nebraska, and Tennessee — provided sample CWD data and Maryland agreed to be the state used for data entry testing for the prototype efforts. WDIN held six virtual workshop sessions this past August to demonstrate the CWDDC prototype to individuals from various organizations including state agencies, U.S. Department of Agriculture, Southeastern Cooperative Wildlife Disease Study, International Association of Fish and Wildlife Agencies (IAFWA), Conservation Management Institute, CWD Alliance, and the U.S. Geological Survey.

The participants' comments were incorporated into the second generation prototype, which was presented through various venues at the 2004 IAFWA Annual Meeting in Atlantic City, NJ: Fish and Wildlife Health Committee, Wildlife Resource Policy Committee, and a 2-hour workshop demonstration. Conference participants also had the opportunity to test the system for themselves at the NBII exhibit booth. Several laptops were set up for this effort and participants were given the option to further test the system and provide online comments after the conference with their designated username and password. Because the CWDDC is meant to be a system that captures the needs of users doing CWD work, comments from IAFWA participants were strongly encouraged. Those received from this effort will also be used in the design of the CWDDC production version.

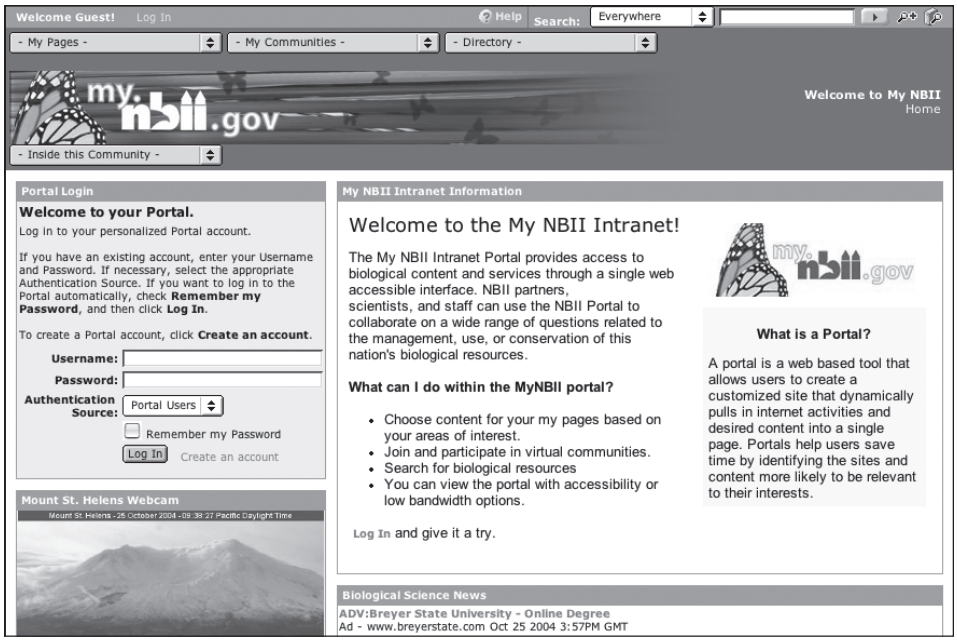
For more information regarding the CWDDC, please contact Vivian Pardo Nolan at <vpnolan@usgs.gov> or Josh Dein at <joshua_dein@usgs.gov>.

NBII Portal (continued from page 1)

travelers will come to see this as an online backup for presentations and material vital for business.

The portal also boasts better project and document management, allowing users to upload multiple files at once, create new content without leaving the portal, and export entire project timelines and tasks directly into Microsoft Project. Additionally, "Webedit" is a new feature, where you can edit a file directly without going through the check-in and check-out process. It is a quick and easy way to make changes to a document without closing and opening multiple software programs. With this tool, version control of files is fast and painless — with one additional step of attaching a discussion, users can author, discuss, correct, and publish entire documents without ever sending an e-mail or leaving the portal.

Behind the scenes, the security architecture is more flexible, giving greater autonomy to Community Managers and allowing them to tailor their communities and create content that best reflects their users' needs. To add greater self-sufficiency,



The new NBII Portal awaits you at <My.NBII.Gov>.

Community Managers can now create their own portlet — fully utilizing all of the tools available in the portal software toolbox.

Training for all levels of portal users is currently underway. There are one-hour sessions for general users, two-hour sessions for Project Leaders, and an innovative two-part, four-hour advanced syllabus for new and existing Community Managers. Training is being conducted in person, groups, and virtually, using screen-sharing technologies over the Internet. For additional information on the portal, its features, or training, please e-mail Nichole Kallas at <nmcneely@usgs.gov>.

Millennium Ecosystem Assessment to Report Findings

A major initiative to provide an assessment of the state of the world's ecosystems, called the Millennium Ecosystem Assessment (MA), will report its findings in spring 2005 to the global environment community. The MA was launched in June 2001 by United Nations (UN) Secretary General Kofi Annan to provide science-based assessments to many of the UN environmental conventions and to synthesize global information from the scientific literature, data sets, and scientific models.

In its capacity as the World Data Center (WDC) for Biodiversity and Ecology, the NBII is working with the MA and other partners – UN Environmental Monitoring Program-World Conservation Monitoring Centre (UNEP-WCMC) and Columbia University's Center for International Earth Science Information Network (CIESIN) – to develop a long-term data archiving and retrieval tool for the data and analyses developed by the MA. Once completed, this tool will offer access to data sets such as protected areas, climate, and global land cover through the WDC, UNEP-WCMC, and CIESIN Web sites. The data exploration tool will allow a user to access the main findings and key results from the MA; use and manipulate data in further research; analyze the kinds of data collected for the MA for individual research; and analyze what data are missing or identify the obvious knowledge gaps.

These data, along with many others, will provide the long-term benchmark on which future global assessments can be performed, and will provide an excellent standardized global data resource for regional and local analyses. By leading the system architecture team and becoming a full and active partner in this project, the NBII is providing a key interface between the global- and national-level identification of information needs and the development of collection and reporting standards. In addition, the NBII is providing metadata support and development for some of these data sets, which will help provide further standardization of metadata resources.

The WDC and its partners anticipate completion of the exploration tool in time to coincide with the rollout of the MA report in late spring 2005. Further enhancements will be made as necessary to ensure these critical data provide users with user-friendly and timely access to information contained within these reports.

NBII Fall Conference Participation

Ecological Society of America

The NBII participated in the Ecological Society of America (ESA) 89th Annual Conference in Portland, OR, held August 1-6. The theme of the conference was "Lewis and Clark: Ecological Exploration of Inhabited Landscapes." The NBII booth highlighted information on program activities and partnerships such as *Sustainability: Science, Practice, and Policy*, a new peer-reviewed open access e-journal developed through a partnership between Cambridge Scientific Abstracts and the NBII (for more information online, visit <http://ejournal.nbii.org/>). Other themes emphasized were NBII metadata activities, in addition to regional and thematic node updates. The NBII booth was visited frequently by conference attendees throughout the week, who were interested in updates about the newest activities or experiencing the NBII for the first time.

Organization of Fish and Wildlife Information Managers

This year the Organization of Fish and Wildlife Information Managers (OFWIM) held their annual meeting in San Diego, CA <www.ofwim.org>. The NBII offered OFWIM attendees the opportunity to participate in metadata training. Two identical half-day sessions offered an overview of the Federal Geographic Data Committee (FGDC) Standard and the Biological Data Profile (BDP), the NBII Clearinghouse, and best practices in metadata development. A third half-day session presented the following day provided a hands-on demonstration of technology used in metadata creation. Each participant was given the opportunity to create a record using metadata development software tools (for more information online about the NBII Metadata Program, visit <www.nbii.gov/datainfo/metadata>).

The NBII's Jen Pollock (left) and Viv Hutchison (center) speak to an NBII exhibit visitor at the ESA Annual Conference.

In addition, the general session included presentations from the NBII California Information Node about the Southern California Data Integration Project, and a Brook Trout Assessment Tool developed by the NBII Fisheries and Aquatic Resources Node and the NBII Southern Appalachian Information Node.

Knowledge Network for Biocomplexity Data Management Tools Workshop

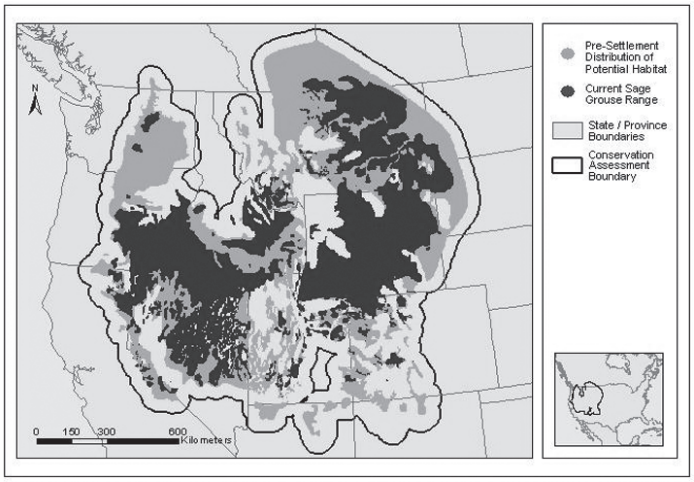
The Knowledge Network for Biocomplexity (KNB) Project is a collaborative effort between such organizations as the Long Term Ecological Research (LTER) Network and the National Center for Ecological Analysis and Synthesis (NCEAS) to facilitate "ecological and environmental research on biocomplexity" <http://knb.ecoinformatics.org/home.html>. The Data Management Tools Workshop, held over 3 days in Santa Barbara, CA, focused on the structure of the Ecological Metadata Language (EML) and metadata tools Morpho and Metacat. Viv Hutchison, NBII Metadata Coordinator, gave a presentation about the FGDC-BDP, to explain the federal government standard for capturing geospatial and biological metadata. Crosswalks between the EML and the FGDC-BDP have already been developed and are in preliminary stages of use. The workshop will further efforts between the NBII, NCEAS, and LTER to collaborate on ways to use and develop metadata for better and more efficient data discovery.

Attendees at the Data Management Tools Workshop included (left to right): Tim Rhyne, Oak Ridge National Laboratory (ORNL); Viv Hutchison, NBII Metadata Coordinator; Stan Attenberger (ORNL); and George Lienkaemper, USGS Forest and Rangeland Ecosystem Science Center.

Providing Access to Information for Rangewide Conservation of Sage Grouse and Sagebrush Habitats

Once estimated to cover nearly 200 million acres, sagebrush ecosystems across the Intermountain West have suffered dramatic reductions in both quantity and quality relative to pre-European settlement conditions. Historic grazing patterns, devastating wildfires, the spread of exotic weeds, drought conditions, and land use conversions have contributed to the overall decline of these systems. Now estimated at approximately half the original area, the sagebrush biome and many wildlife species that depend on it are at risk of further habitat loss, fragmentation, and degradation. As a result, a surge of conservation and restoration efforts have begun throughout the West.

Long-term population trends for the greater sage grouse provide a reflection of this loss as both their geographic distribution and total population have been reduced (see graphic). More recent concerns such as the potential effects related to the spread of West Nile virus, combined with the previous factors, indicate an uncertain future for this species.



Long-term population trends for the greater sage grouse.

In 1996, in response to a report by the regional Sage Grouse Technical Committee to the Western Association of Fish and Wildlife Agencies, a Memorandum of Understanding (MOU) was established on behalf of all the western states and two Canadian provinces (Alberta and Saskatchewan) as a renewal of their commitment to conserve sage grouse and sagebrush habitat. In 2000, the MOU was expanded to include additional support from the U.S. Fish and Wildlife Service, U.S. Forest Service, and Bureau of Land Management. One of the outcomes of the 2000 Inter-agency MOU was the establishment of the National Sage Grouse Conservation Planning Framework Team. The Team was given the responsibility of developing a rangewide conservation assessment to serve as a framework and to ensure the consistency of state-based efforts.

In 2003, the International Association of Fish and Wildlife Agencies and the NBII Program provided financial assistance to the Conservation Assessment process and collaborated with Utah State University to help with the data integration aspects of the project. *The Conservation Assessment of Greater Sage Grouse and Sagebrush Habitats* was completed this past June. The document provides a consistent, comprehensive analysis of the status and trends of sage grouse and their habitats based on the best science available.

The NBII continues to provide data support for the planning and implementation of the "on-the-ground" conservation action phase of the process. Locally based sage grouse conservation teams or Local Working

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ITIS Kudos

The Science and Technology Section of the American College and Research Libraries Association recently named the Integrated Taxonomic Information System (ITIS) as one of the "Top 100" government science and technology links. The organization provides a forum through which librarians in scientific and technical subject fields can achieve and maintain awareness of the impact and range of information with which they work; and promotes improved accessibility to and active use of this information.

ISI Current Web Contents has included ITIS in its premium selection of scholarly Web sites. ITIS was selected by an expert panel on the basis of authority, accuracy, currency, navigation and design, applicability and content, scope, audience level, and quality of writing. The primary goal of this selection process is to ensure that the sites selected are highly authoritative, and that the information they cover is, in fact, scholarly and reliable.

ITIS is a partnership of several federal agencies (including the USGS), the Smithsonian Institution, NatureServe, Mexico, and Canada, and is a vital component of the NBII. ITIS provides authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

ITIS Integrated Taxonomic Information System

U.S. Biotechnology Information Available Through New Web Site

The U.S. federal government has established a coordinated, science-based system to ensure that products resulting from biotechnology are safe for the environment and human and animal health. The new "United States Regulatory Agencies Unified Biotechnology Web Site" <http://usbiotechreg.nbii.gov> provides information on the U.S. regulatory process for biotechnology products and access to a database of completed regulatory reviews.

The partnership-driven site, developed with guidance from the U.S. State Department and hosted by the NBII, brings together information from the three federal agencies that share responsibility for regulating agricultural biotechnology in the United States: the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, the U.S. Department of Health and Human Service's Food and Drug Administration, and the Environmental Protection Agency. Depending on its characteristics, a biotechnology product may be subject to review by one or more of these agencies.

The heart of the new Web site is a searchable database, updated regularly, that covers crop plants developed through the use of modern biotechnology that have completed the recommended or required reviews for planting, food, or feed use in the United States. This database lists *only* products that have completed evaluations by *all* relevant federal agencies for a particular use. The database may be searched by common or scientific name, trait (insect resistance, herbicide tolerance, etc.), applicant, event, or keyword, including trade name. Each record has product information, including reviewed uses within the United States, and regulatory agency review summaries. Regulatory information for each product, hosted by the agencies themselves, can be accessed through links in the database.

Links to International Biosafety Information

Information on the U.S. site concerning living modified organisms (LMOs) is reported to the Biosafety Clearing-House (BCH). The BCH is an international information exchange mechanism established by the Cartagena Protocol on Biosafety to assist parties in the implementation of the provisions of the Protocol and to facilitate sharing of information on, and experience with, LMOs.

The United States will provide capacity-building support to countries wishing to use the U.S.-developed database and Web site templates to provide access to their own biosafety information. The United States will cosponsor training workshops in conjunction with the United Nations Environment Program–Global Environment Fund Biosafety Clearing-House Project, as well as offer phone and e-mail technical support.

For more information on the U.S. templates and/or capacity-building assistance, e-mail the NBII's Donna Roy at <droy@usgs.gov> or phone 703-648-4209.

Three USGS Biologists Honored by State Department

Michael Ruggiero, Ph.D., Director of the Integrated Taxonomic Information System; T. Douglas Beard, Ph.D., NBII Fisheries and Aquatic Resources Theme Coordinator; and Annie Simpson, NBII Invasive Species Theme Coordinator, were recipients of a Group Meritorious Honor Award for their contributions as part of a U.S. Delegation to the Seventh Conference of the Parties to the Convention on Biological Diversity.

Assistant Secretary of State John F. Turner presented the award at a ceremony last July 20 at the State Department in Washington, DC.

The citation on the award reads: "For extraordinary efforts to advance U.S. interests during the Seventh Conference of the Parties to the Convention on Biological Diversity and further the conservation of biological diversity worldwide."

Awardees (left to right) Mike Ruggiero, Annie Simpson, and Doug Beard.

All three biologists work in the USGS Biological Informatics Office, which serves as the NBII National Program Office.

Sage Grouse (continued from page 6)

Groups (LWGs) have been established (or soon will be) in all western states. Each LWG is responsible for developing a conservation plan to meet the needs of their specific area. As LWGs carry out their plans, having a centralized resource for monitoring the progress of their actions will be extremely useful in providing consistent and timely feedback to managers.

Efforts are now under way to develop a monitoring protocol for tracking LWG actions, timelines, and designated conservation areas. Information from the tracking database will be linked to a GIS to identify the total area covered by active conservation efforts within the historical and current ranges of sage grouse. Approximately 70 LWGs are expected by 2008. Each LWG will have a unique combination of agencies, local organizations, and set of strategies based on local priorities. With a consolidated and effective monitoring protocol in place, this will provide a better understanding of conservation efforts on a rangewide basis.

The scale of the sage grouse conservation effort is unparalleled. With 11 western states, 2 Canadian provinces, and the involvement of many federal agencies, the conservation effort crosses a wide variety of political boundaries as well as numerous contemporary land management issues.

Upcoming Events of NBII Interest

Wetlands 2004 – Wetlands and Migratory Birds: Protecting and Restoring Wetlands of National Significance, Kansas City, MO.	October 19-20
KMWorld & Intranets, Santa Clara, CA.	October 26-28
North American Association for Environmental Education 2004 Annual Conference, Biloxi, MS.	November 6-10
19th CODATA International Conference — The Information Society: New Horizons for Science, Berlin, Germany.	November 7-10
National Association of Biology Teachers 2004 Convention, Chicago, IL.	November 10-13
American Society for Information Science and Technology (ASIST) 2004 Annual Meeting: "Managing and Enhancing Information: Cultures and Conflicts," Providence, RI.	November 12-17
Sixth International Conference on Grey Literature: Work on Grey in Progress, New York, NY.	December 6-7

National Biological Information Infrastructure

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